NEMATICIDAL ACTMTEES OF IODINATED HYDROCARBONS

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The nematicidal properties of low molecular weight [CI - C8] iodinated hydrocarbons was assessed in greenhouse experiments with field soil infested with *Meloidogyne arenaria* [Ma] and *Heterodera glycines* [Hg]. The chemicals were added directly to soil at rates <100 mg/Kg soil. Treated soil was kept moist [approx. 60% field capacity] and uncovered for 7-10 days when samples were collected and the pots were planted with 'Brim' soybean *[Glycine mac]*. Di-iodo compounds were generally more effective in controlling nematodes and reducing root gall formation by Ma than the monoiodo hydrocarbons; however, there were significant differences in nematicidal properties among the diiodo compounds. 1,2-diodoethane [C2], 1,3-diiodopropane [0], 1,4diiodobutane [C4], 1,5-diodopentane [C5], 1,6-diiodohexane [C6] and 1,8-diiodobutane were applied to soil at rates of 2.5, 5.0, 7.5, and 10.0 mgs/Kg soil. All rates of C2 and C8 were ineffective in reducing Ma juvenile [J2] populations in pre-plant samples. This was also true for C2 and J2 populations of Hg; however, C8 rates $\geq$ 5.0 mgs suppressed J2 populations of Hg. C3, C4, C5, and C6 applied at rates $\geq$ 5.0 mgs virtually eliminated J2 populations of Ma and Hg in preplant samples. Hg J2 numbers in final soil samples were generally inversely related to rates for C3-C8. This pattern of suppression in J2 numbers was also applicable to Ma in the final soil samples but only for 0-C6. C2 applications resulted in either no change in Hg J2 numbers or in increased numbers. Final numbers of Ma J2's in soil increased directly with C2 dosage but did not change significantly in response to C8 rates. Applications of C3-C6 to soil increased shoot weights in a manner directly related to dosages but non-linear in pattern. Number of galls/gm root and root-knot index values declined proportionately to increasing rates of C3-C6 but the opposite was observed for C2 and C8, Results showed that C3-C6 were the most nematicidal among the compounds tested.